

From J.E.S. JAN 27 1943

*Introduction*

FOREWORD

In 1922 and 1923, in accordance with an agreement between Skagit County, Washington, and the U. S. Geological Survey, a study was made to determine Skagit River flood flows. When neither extra field time nor expense were involved, additional data were collected and possible remedial measures studied as opportunity offered, this latter part of the study being above and beyond the agreement.

The field work and part of the office work was accomplished in the four months from the middle of November, 1922, to the middle of March, 1923. In March, 1923, the writer resigned from the U. S. Geological Survey. But to fulfill the agreement with Skagit County, the office work was continued at every available opportunity until a preliminary report was issued in September, 1923.

In the preliminary report were embodied not only estimates of flood flows (thus fulfilling the terms of the agreement) but also suggestions as to certain protective measures that should receive immediate attention and suggestions as to how to go about preparing for permanent protective measures.

After completing the preliminary report, the writer continued the study, as convenient opportunity offered, up to the present time. The work since March, 1923, has been without financial remuneration, but the writer will feel amply repaid if the study and this more complete report result in the saving of life and property in Skagit Valley, and a material advance in the science of hydraulics.

As the Skagit study has received some favorable comment during the passing years, it has been considered worth while to publish it, along with a general analysis of maximum flood flow determinations.

If the deductions are correct, many of the methods used in the Skagit River study should be applicable to most of the rivers in the forested sections of the Pacific coastal region, and some of the methods used should be applicable anywhere. Therefore, it, as well as the writer's general analysis of maximum flood flows, may be of value to other workers along the same lines. Accordingly, the writer has taken pains to fully describe all the methods used in both cases.

It is the writer's opinion that, as far as possible when studying floods and flood prevention, a comprehensive investigation should be made, utilizing all sciences having a bearing on the subject; i.e., meteorology, geography, geology, botany, etc. Such a detailed study as the writer made for the Skagit may not always be justified. Yet it would seem that much more thorough investigations should be made than ordinarily are made. Perhaps this work may aid others in making a more complete investigation than they would otherwise make, or better still, it may lead to more thorough and complete investigations than that for the Skagit.

Many dams throughout the world have been designed with inadequate

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spillways; accordingly, the writer takes the opportunity of using this report not only as an example of a fairly complete flood study for one stream, but also as to how best to use available information and methods.